

M.Sc. Examination, 2016
Semester – I
Environmental Science
Paper – MEC-12
(Climatology and Climate Change)

Time: 3 Hours

Full Marks: 40

Questions are of value as indicated in the margin.
Answer question no. 1 and any four from the rest

1. Write short note on **any four** of the following : 2×4=8
 - a) MMM (Meso & Micro scale Meteorology)
 - b) ITCZ
 - c) Milanokovitch cycle
 - d) Western Disturbance
 - e) Heat Dome
 - f) Forced and Pure Plumes
2. a) Describe the factors that influence the temperature at any location on earth's surface. 5+3=8
b) What are isotherms? What type of information do they provide?
3. a) What is mean by 'lapse rate'? 1+3+4=8
b) What are the different types of lapse rate you have studied?
c) How the stability of the atmosphere is changed due to lapse rate?
4. a) Describe the role of clouds in the earth climate system. State the different types of clouds. 2+3+3=8
b) Describe the three types of precipitation.
5. Write a note on Indian Summer Monsoon (ISM), describing its onset, advancement, active and break phases and withdrawal. Discuss its spatial and temporal variations. 5+3=8
6. a) Explain the thermo-haline circulation in the world oceans. 4+4=8
b) What is El-Nino? Describe its relation with Southern Oscillation Index (SOI) and its influence on global climate.
7. a) Explain the concept of greenhouse effect and global warming. Discuss on some evidences for global warming. 4+4=8
b) Write a note on 'Paris agreement' on climate change and India's contribution to it.